REMARKS/ARGUMENTS

The present response is intended to be fully responsive to the rejection raised in the Office action, and is believed to place the application in condition for allowance. Further, the Applicant does not acquiesce to any portion of the Office Action not particularly addressed. Favorable reconsideration and allowance of the application is respectfully requested.

In the Office action, the Office noted that claims 1-3 are pending and rejected. Claim 1 has been amended to better recite Applicant's inventive concept. Applicant has not introduced any new matter by way of the foregoing amendment or added claims.

In view of the above amendment and the following discussion, the Applicant submits that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. § 103. Thus, Applicant believes that all of these claims are now in condition for allowance.

REJECTION

Applicant's Response to the 35 U.S.C. § 103(a) Rejection of claims 1-3

The Office rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,748,247 issued to *Hu* in view of U.S. Patent No. 6,452,969 issued to *Yim*.

In the Office Action, the Office insinuated that the combination of *Hu* and *Yim* discloses all the elements recited in claim 1. In support of the rejection, the Office indicated that "Hu does not disclose details of performing motion vector refinement in the DCT domain. However, Yim discloses a method of performing inverse motion compensation in the DCT domain (Yim col. 9 line 17 to col. 14 line 24 for a detailed description of process)." *Office Action*, at page 3.

Claim 1 has been amended to better recite Applicant's inventive concept. Amended claim 1 recites a combination of elements directed to a method for motion vector estimate. The combination of elements includes:

> "...when a boundary of a first reference DCT block located by said motion vector estimate in said reference frame does not align with a boundary of any of said DCT blocks in said reference frame, (i) define a motion vector search window by adjoining DCT coefficients along the boundaries of said first reference DCT block in said reference frame; (ii) refine said motion vector

estimate by searching over potential motion vectors which locate potential reference DCT blocks within said search window; and (c) when a boundary of a first reference DCT block located by said motion vector estimate in said reference frame aligns with a boundary of any of said DCT blocks of said reference frame, (i) define a motion vector search window by repeating DCT coefficients of the aligned boundary(es) of said first reference block in said reference frame; (ii) refine said motion vector estimate by searching over potential motion vectors which locate potential reference DCT blocks within said search window."

Applicant agrees with the Office that *Hu* "does not disclose details of performing motion vector refinement in the DCT Domain." *Office Action*, at page 3. Yim, on the other hand, discloses a "method of inverse motion compensating in a transform domain... comprising... obtaining a first and second fractional pel displacement... selecting a first DCT shifting matrix that when applied to a transform domain reference block shifts said transform domain reference... selecting a second DCT shifting matrix... and applying said first DCT shifting matrix and second DCT shifting matrix to said transform domain...." *Yim*, at col. 17 line 37-56 [emphasis added]. Thus, *Yim* describes a method applied in transform domain, rather than in space domain. Furthermore, unlike claim 1, *Yim* is devoid from disclosing the combination of elements directed to:

> "...when a boundary of a first reference DCT block located by said motion vector estimate in said reference frame does not align with a boundary of any of said DCT blocks in said reference frame, (i) define a motion vector search window by adjoining DCT coefficients along the boundaries of said first reference DCT block in said reference frame; (ii) refine said motion vector estimate by searching over potential motion vectors which locate potential reference DCT blocks within said search window; and (c) when a boundary of a first reference DCT block located by said motion vector estimate in said reference frame aligns with a boundary of any of said DCT blocks of said reference frame, (i) define a motion vector search window by repeating DCT coefficients of the aligned boundary(es) of said first reference block in said reference frame; (ii) refine said motion vector estimate by searching over potential motion vectors which locate potential reference DCT blocks within said search window."

As such, the Applicant submits that the combination of *Hu* and *Yim* fails to disclose all the elements recited in claim 1. Hence, the Applicant requests reconsideration and withdrawal of the rejection to the amended claim 1. Claim 2 and 3 depend from independent, amended claim 1, and necessarily recite all the elements

of claim 1. Since the Applicant submits that the combination of Hu and Yim is devoid from disclosing all the elements of claim 1, the Applicant further submits that the combination of *Hu* and *Yim* is also devoid from disclosing all the elements of claim 2 and 3. As such, the Applicant submits that claim 1-3 satisfy all the requirements of U.S.C. § 103(a) and are in condition for allowance. Reconsideration and withdrawal of the rejection to claims 1-3 is respectfully requested.

CONCLUSION

In view of the foregoing, the Applicants submit that none of the claims presently in the application are obvious under the provisions of 35 U.S.C. § 103(a). Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Office believes that any unresolved issues still exist or if, in the opinion of the Office, a telephone conference would expedite passing the present application to issue, the Office is invited to call the undersigned attorney directly at 972-917-4365 or the office of the undersigned attorney at 972-917-0995 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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